

Linear Systems of Equations

$$\begin{cases} y = x + 5 \\ y = -2x + 5 \end{cases}$$

Substitution

- Solve both equations for y , will get 1 answer for both equations

Elimination

- Add two equations together,
 - could have same x -int, or even be the same line
 - could be parallel
- have same y -value and x -value at a point

$$3x + 2y = 510$$

$x = \begin{matrix} \text{Cost} \\ \text{Night} \\ \text{lodging} \end{matrix}$

$$5x + 4y = 900$$

$y = \begin{matrix} \text{Cost} \\ \text{Snorkeling} \end{matrix}$

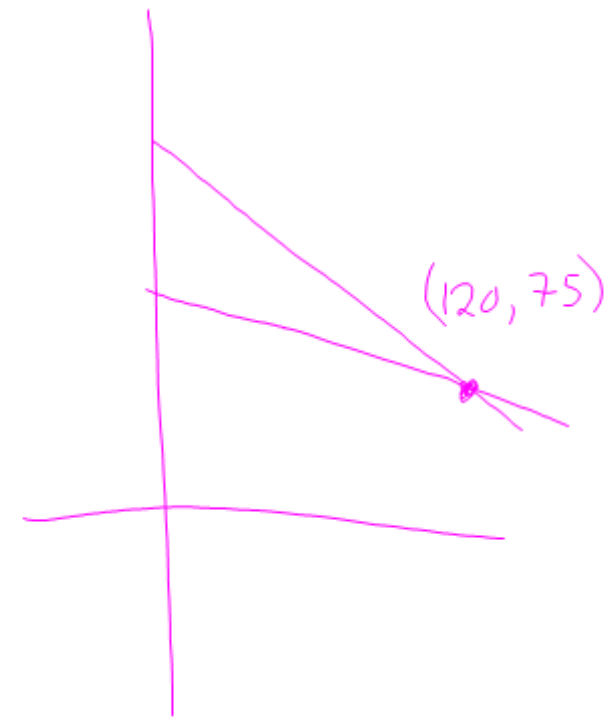
$$2y = 510 - 3x \rightarrow$$

$$y = 255 - \frac{3}{2}x$$

$$4y = 900 - 5x \rightarrow$$

$$y = 225 - \frac{5}{4}x$$

$$255 - 1.5x = 225 - 1.25x$$



3)

$$\frac{40}{100} \quad \frac{x}{125}$$

$$100x = 5000$$

$$x = 50$$

$$125 - 50 = 75$$

$$350 = 50x$$

new
old

$$y = 75x + 350$$

$$y = 125x + 100$$

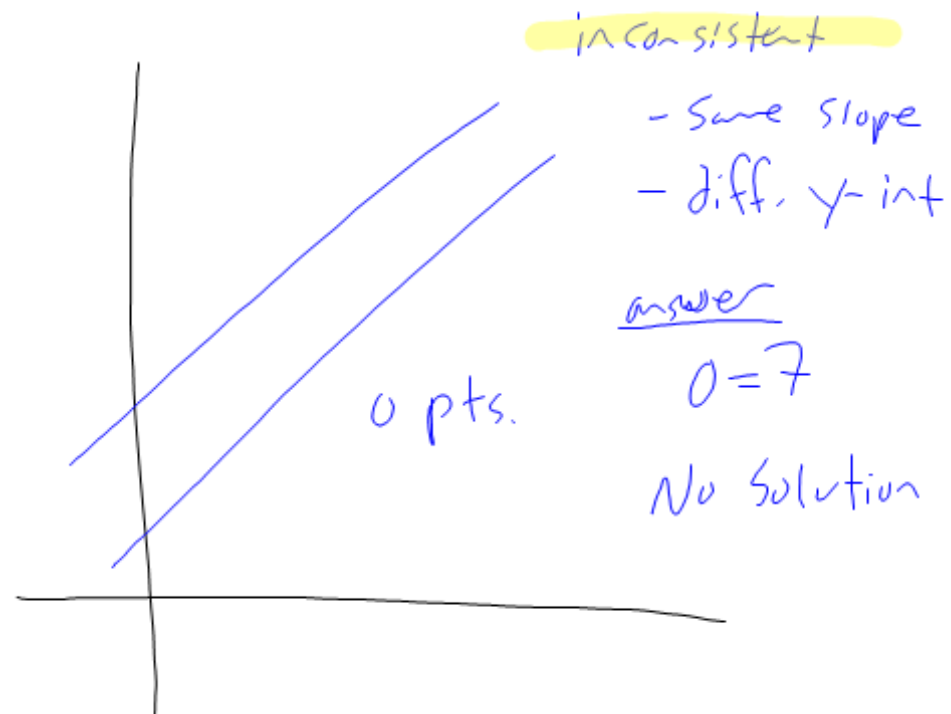
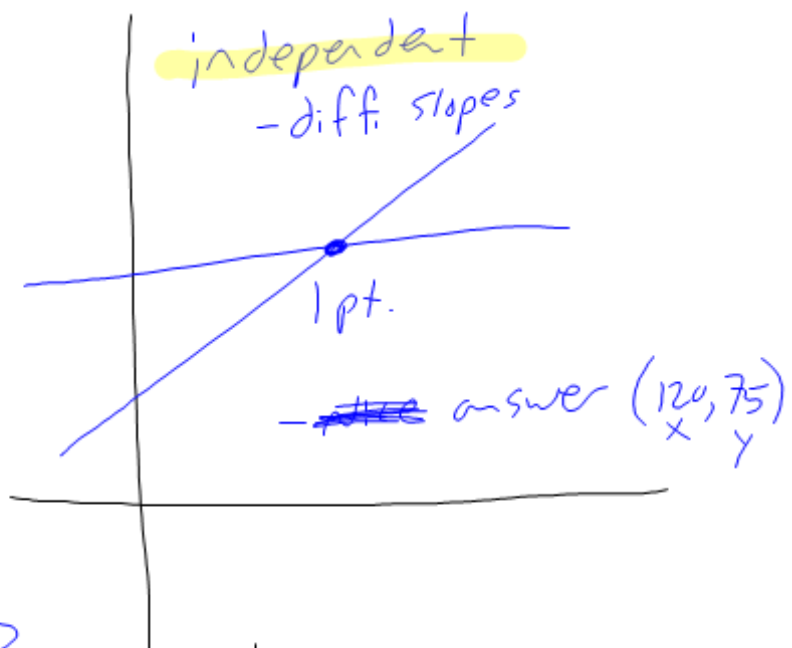
\$ 725 for 5 yrs.

\$ 800 for 6 yrs

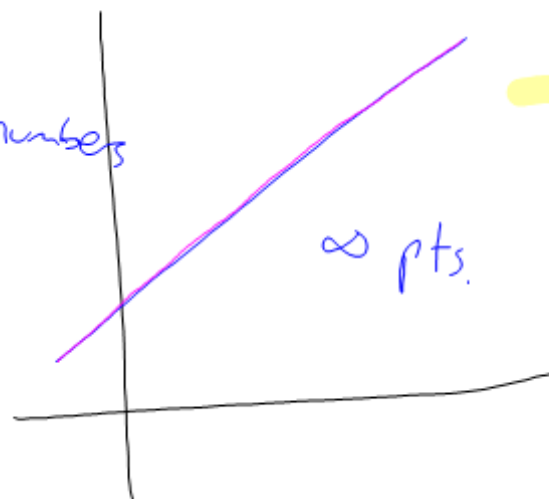
\$ 725 for 5 yrs.

\$ 850 for 6 yrs.

$$75x + 350 = 125x + 100$$



all
 \mathbb{R}
all real numbers



dependent
- same slope
- same y-int

answer
 $0 = 0$
All \mathbb{R}
 ∞ solutions

Sect. 3.1

1-9 (odd), 10 or 11, 25-28, 37-48, ~~50~~, ~~51~~